PATENT ABSTRACTS OF JAPAN

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(54) INSULATED-GATE TYPE SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF

(57) Abstract:

PURPOSE: To realize a reduction in an on-state voltage and the improvement of a current, which can be turned off, in a reconciliation manner.

CONSTITUTION: An N-type layer 43 having an impurity concentration higher than that of an N⁻ layer 42 is provided between the layer 42 and a P-type base layer 44. Moreover, P⁺ layers 91 having an impurity concentration higher than that of the layer 44 are formed in the exposed surface of the layer 44 which is connected with an emitter electrode 51. As the layer 43 is provided, a carrier distribution in the layer 42 approaches a carrier distribution in a diode. As a result, an on-state voltage is reduced as the value of a current, which can be turned off, is maintained high. Moreover, as holes are easy to escape from the layer 44 to the electrode 51 owing to the layers 91, the value of the current, which can be turned off, is improved.

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